

نام و نام خانوادگی محمد رحمان پاسخنامه تشریحی تکلیف شماره ۷ کلاس B

$$\sqrt{x f(x)} \geq 0 \rightarrow \begin{cases} x \geq 0, f(x) \geq 0 \Rightarrow x \in [2, 6] \\ x < 0, f(x) < 0 \Rightarrow x \in [-6, 0] \end{cases} \Rightarrow D_f = [-6, 0] \cup [2, 6]$$

$$\sqrt{\frac{-x}{f(x)}} \geq 0 \rightarrow \begin{cases} x \leq 0, f(x) < 0 \Rightarrow x \in (-\infty, 0) \\ x > 0, f(x) > 0 \Rightarrow x \in (0, 2] \end{cases} \Rightarrow D_f = \{-2, -1, 1\} \Rightarrow \text{مجموع}$$

$$f(x) - 2f(2) = x^2 - 2x + 4$$

$$f(2) - 2f(2) = 4 - 4 + 4$$

$$f(2) = -2$$

$$f(-2) - 2f(2) = (-2)^2 - 2(-2) + 4 \Rightarrow f(-2) + 4 = 12 \Rightarrow f(-2) = 8$$

$$f(x) = \begin{cases} x - \sqrt{x+4} & x > 2 \\ 2x+3 & x \leq 2 \end{cases}$$

$$f(f(5)) + f(f(1))$$

$$f(5-2) + f(5) \Rightarrow 7+2=9$$

$$f(x) = ax^2 + bx + c$$

$$f(-1) - f(0) = 4 \Rightarrow a + b + c - c = 4 \Rightarrow a + b = 4$$

$$f(1) - f(0) = 2 \Rightarrow a + b + c - c = 2 \Rightarrow a + b = 2$$

$$f(0) - f(1) = 1 \Rightarrow c - (a + b + c) = 1 \Rightarrow -a - b = 1$$

$$2 - a + b - 2 = 1 \Rightarrow -a + b = 1$$

$$a - b = -1$$

$$a + b + c - c = 4$$

$$a + b = 2$$

$$-a - b = 1$$

$$2b = 3 \Rightarrow b = \frac{3}{2}$$

$$a = -\frac{1}{2}$$

$$f(x) = x^r - r x + 1$$

$$\frac{r f(r) + f(-1)}{f'(r)} = \frac{r(r^r - r(r) + 1) + (-1)^r + r + 1}{(r^r - r^r + 1)^r} = \textcircled{V}$$

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$$f(x) = \begin{cases} r x + 1 & x \geq r \\ x^r & x < r \end{cases}$$

$$\frac{r f(r) - r f(-r)}{f(r)} = \frac{r(r(r) + 1) - r((-r)^r)}{r(r) + 1} = \textcircled{\frac{r}{V}}$$

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$$\frac{f(f(r)) - f(f(r))}{f(1) - r} = \frac{f(r) - f(r)}{r - r} = \frac{r - r}{r} = \textcircled{0}$$

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$$f(x) = \frac{x^r + r x + 9}{x^r + r x + 6}$$

$$\frac{x^r + r x + 9}{x^r + r x + 6} = \frac{x^r + r x + r + 6}{x^r + r x + r + 1} \Rightarrow \frac{(x+r)^r + 6}{(x+r)^r + 1} = \frac{(\sqrt{r})^r + 6}{(\sqrt{r})^r + 1} = \frac{1}{r} = r$$

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$$\xrightarrow{x=r} \frac{(r)^r + r(r) + 9}{(r)^r + r(r) + 6} = \textcircled{\frac{r}{1V}}$$

$$f(x) = x^r + \frac{1}{x^r} \Rightarrow \left(x + \frac{1}{x}\right)^r - r \left(x + \frac{1}{x} + r - r\right)^r - x^r - \frac{1}{x^r} - r - r$$

$$(f(\sqrt{x}))^r - f(x) = \left(x + \frac{1}{x}\right)^r - x^r - \frac{1}{x^r}$$

$$\left(\left(\sqrt{x + \frac{1}{x}}\right)^r - r\right)^r - \left(x + \frac{1}{x}\right)^r - r = x^r + \frac{1}{x^r} + r - x^r - \frac{1}{x^r} = \textcircled{r}$$

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